



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/517,427 | 03/14/2005 | Otto Skovholt | 033246-0166 | 2508 |
| 22428 7590 11/09/2009 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007 | | | | |
| EXAMINER | | | | |
| CASTELLANO, STEPHEN J | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 3781 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 11/09/2009 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,427

Applicant(s)

SKOVHOLT ET AL.

Examiner

/Stephen J. Castellano/

Art Unit

3781

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 8-11 and 14-34 is/are pending in the application.
- 4a) Of the above claim(s) 14-18 and 33 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19, 25 and 34 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 8-11, 20-24 and 26-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Rule 126 Renumbering:

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 30-35 have been renumbered 29-34, respectively.

Election/Restriction:

Claims 15-18 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and specie, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 23, 2008.

Newly submitted claims 14 and 33 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The plastic materials are claimed for the thin joined plates and/or joined sheets.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 14 and 33 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

New Matter Rejections:

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 8-11, 20-24 and 26-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 states that the compact, integrated structural load bearing and fluid tight wall consisting of three elements (fluid tight barrier and inner and outer wall elements) together resists compaction and expansion forces. The original disclosure only supports that the inner wall element by itself resists only compaction forces.

Claim 20 states “an inner and outer steel ring, welded to a steel bottom of the inner wall element.” However, the inner and outer steel ring are the same components as the inner vertical steel plate 28 and the outer vertical steel plate 29 previously claimed in independent claim 19. The steel bottom is the same component as the horizontal metal plate 27 previously claimed in independent claim 19. The use of different terminology to refer to these same elements is inconsistent and misleading as one might mistake these elements for additional elements. Therefore, this claim should be revised by removing repetitious structure and keeping only the portions which modify claim 19.

Claim 27 states that the outer wall element imparts a structural restraining force onto the fluid tight barrier resisting movement of the fluid tight barrier towards the outer wall element. There is no support for this statement in the original disclosure. Note that the inner wall element

is imparting a structural restraining force, simultaneously. The structural restraining force of the inner wall element is supported by the specification (see page 4, lines 1-7).

Claim 28 states that no insulation is provided between the wall elements. There is no support for this statement in the original disclosure.

These are new matter rejections.

Repetitious Claim Limitations:

Claim 19 should be revised to eliminate the repetitious claim language of lines 12-14 because the steel membrane/ outer surface of inner wall element limitation is previously discussed in lines 8 and 9.

Art Rejections:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 22-24, 26-29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Bomhard (4366654).

Bomhard discloses a tank for storing cryogenic fluids as it is capable of storing low temperature liquids. Bomhard comprising an inner tank(the only tank), wherein the inner tank includes: a base plate (5, 10, 16, 17, 18, 19, 20 and horizontal portions of layers 11 and 12), a vertical wall (4, 9, 13, 14 and vertical portions of layers 11 and 12), the inner tank being

provided with a fluid tight barrier (vertical portion of metal liner 11), an inner structural supporting wall element (14, 15) made of concrete, an outer structural supporting wall element (4) made of concrete.

The fluid tight barrier having a structure consistent with a method of forming wherein thin joined plates and or joined sheets are connected together without seams. The “being formed of thin joined plates and/or joined sheets” limitation is a method limitation within a product claim. The method of forming doesn’t need to be found. The structure is consistent with this method of forming.

The wall elements and barrier form a compact, integrated structural load bearing and fluid tight wall together resisting against expansion and contraction forces.

The base plate is arranged to be fluid tight and is fluid tightly joined with the intermediate fluid tight barrier arranged between the wall elements.

Re claims 22-24, the inner wall element includes side wall 9, vertical extending portion of layer 12, insulation material 13 and upwardly extending leg 15 of concrete ring 14.

Re claims 24 and 26-27, the inner wall element is a structural element. If cool temperature reaches fluid tight barrier 11 and causes it to contract, the structural elements of the inner wall element will prevent or restrain the contracting of the barrier 11. In turn, the fluid tight barrier will exert a prestressing force radially inward on the inner wall element during the compaction.

Re claim 28, the insulation 13 is provided within the inner wall element and is not between the inner and outer wall elements.

Claims 1, 22-24, 26-29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by British reference No. 1341892 (the British reference).

The British reference discloses a tank for storing cryogenic. The tank comprising an inner tank(the only tank), wherein the inner tank includes: a base plate (26, 22, 32, 16, 28), a vertical wall (52, 50, 48, 46, 40, 38, 36, 30), the inner tank being provided with a fluid tight barrier (steel wall 40), an inner structural supporting wall element (30, 36, 38) made of concrete (wall 30 is concrete), an outer structural supporting wall element (everything outside of wall 40) made of concrete (layer 46 is concrete).

The fluid tight barrier having a structure consistent with a method of forming wherein thin joined plates and or joined sheets are connected together without seams. The “being formed of thin joined plates and/or joined sheets” limitation is a method limitation within a product claim. The method of forming doesn’t need to be found. The structure is consistent with this method of forming.

The wall elements and barrier form a compact, integrated structural load bearing and fluid tight wall together resisting against expansion and contraction forces.

The base plate is arranged to be fluid tight and is fluid tightly joined with the intermediate fluid tight barrier arranged between the wall elements. The evidence of this is the scenario suggested by page 2, lines 107-111 that if the inner wall 30 were to fail, the contents would then pass through insulation 38 to the outer steel wall 40. This suggests that the steel wall forms a barrier that is leak proof and would be fluid tightly joined to a leak proof wall of the base.

Re claims 24 and 26-27, the inner wall element is a structural element. If cool temperature reaches fluid tight barrier 40 and causes it to contract, the structural elements of the

inner wall element will prevent or restrain the contracting of the barrier 11. In turn, the fluid tight barrier will exert a prestressing force radially inward on the inner wall element during the compaction.

Re claim 28, the insulation 13 is provided within the inner wall element and is not between the inner and outer wall elements.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard.

If it should be deemed that no insulation layer can exist in the wall elements then it would have been obvious to remove insulation layer 13 if it is deemed not to be necessary.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard in view of Closner et al. (3926134) (Closner).

Bomhard discloses the prestressed concrete material of the outer wall element but fails to teach multi-axially prestressed concrete. Closner teaches an outer concrete wall which is prestressed in a plurality of directions and is considered multi-axially prestressed concrete. It would have been obvious to prestress the concrete in more than one direction to add strength in another direction to prevent or restrain expansion forces and axial forces rather than one or the other of these forces.

Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard in view of Yamamoto (3595423).

Bomhard discloses the invention except for outer tank. Yamamoto teaches an outer tank (2, 2', 2'', 2''') which encompasses an inner tank (4, 4', 4'', 4b, 4c), a layer of insulation (3', 3'', 3''') is interposed between the inner and outer tanks. It would have been obvious to add an outer tank and insulation to provide thermal protection as well as impact protection to the inner tank.

Allowable Subject Matter:

Claims 19, 25 and 34 are allowed. However, there is some repetition within claim 19. Also, claim 25 contains some unnecessary repetition.

Claims 20 and 21 which depend from allowed claim 19 are not deemed allowable because of a new matter rejection. However, there is no art rejection. Claim 20 also may contain only limitations which repeat the structural limitations of claim 19. Cancellation of claim 20 is suggested. Claim 21 provides additional structure beyond what is stated in claim 19. If claim 20 is cancelled, it would be appropriate to have claim 21 depend directly from claim 19.

Claims 8-11 are not deemed allowable because of a new matter rejection. However, there is no art rejection for claims 8-11. If the new matter is removed from these claims, it may place them in allowable condition.

Response to Arguments:

Applicant's arguments filed July 17, 2009 have been fully considered but they are not persuasive. The rejections have been rewritten and the grounds of rejection have been changed. The rejections should fully explain how the references meet all limitations. Certain claims are

believed to contain allowable subject matter. Other claims should be rewritten to eliminate repetition of claimed elements and claimed constructions.

Regarding the three combined elements that "form a compact, integrated structural load bearing and fluid tight wall together resisting against expansion and contraction forces ...", this limitation is broadly interpreted as applicant has not placed any specific dimensional limitation to the word "compact." Also, the resisting of expansion and compaction forces by the compact structure of three elements is not particularly mentioned within the original disclosure.

Conclusion:

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Stephen J. Castellano/ whose telephone number is 571-272-4535. The examiner can normally be reached on increased flexibility plan (IFP).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony D. Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J. Castellano/
Primary Examiner
Art Unit 3781

sjc